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AUTHOR Johnson, C. Frances; Hales, Loyde W.
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ABSTRACT

A study examined the effectiveness of the current inservice training process used to teach newly employed nurses at Bess Kaiser Medical Center to transfer nursing process theory to practice. Eighty-two of 102 recently hired registered nurses were included in the audit sample. The newly hired nurses, whose previous experience varied from less than 6 to more than 10 years of nursing experience, were required to take a 4-hour nursing process class that addressed 12 objectives, including clarifying the relationship between the nursing process and delivery of nursing care, distinguishing between a medical and nursing diagnosis, utilizing interviewing techniques, utilizing assessment information, reassessing patients, documenting the nursing process, and integrating the nursing process into the unit's delivery of health care. Pre- and posttests were administered to the nurses to assess the effectiveness of the nursing process workshop. Overall, the study supported the position that the educational process for nurses must include not only the theory of nursing practice, but also a practical method of applying the theory to practice. For example, when the charting behavior of the nurses who attended the workshop was compared with that examined in a previous study, the workshop appeared to have a positive effect. (MN)

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Implementation of Nursing Process: An Evaluation of an Inservice Educational Program in an HMO Acute Care Hospital

C. FRANCES JOHNSON, R.N., Ed.D.
Bess Kaiser Medical Center

LOYDE W. HALES, Ed.D
Portland State University

Objectives

Basically, this study was intended to address the following research questions: (1) Does the current training process used at Bess Kaiser Medical Center teach newly-employed staff nurses to transfer nursing process theory to practice? (2) Do the newly-employed staff nurses apply and document the nursing process in patients' charts? (3) Is type of nursing preparation related to knowledge of and effectiveness in the use of nursing process.

Perspectives

The scope of nursing practice has greatly expanded in the past forty years, increasing both the responsiblity and accountability of the nurse in the role of care provider. It is no longer acceptable to view medical care as the prime focus of patient care; nursing care must now be included (Harris, 1979). The chart of the individual patient must reflect the activities of the nurse as nursing care is delivered. Charting needs to document the nursing assessment, diagnosis, planning, implementation and evaluation stages of nursing process (Ashworth, 1980a, 1980b; Brown, 1979; Butherus, 1978a, 1978b; Carlson, Craft & McGuire, 1982; Walker & Nicholson, 1980; Yura & Walsh, 1973).

The nursing process has become the framework for nursing practice (Aspinwall, 1976; Bartos & Knight, 1978; Boylan, 1982; Browning & Minehan, 1974; Lewis, 1974; Mauksch & David, 1972; Yura & Walsh, 1973). Nurses, however, often either do not understand the nursing process model or do not use it (Ashworth, 1980a, 1980b; Johnson, 1982; Lewis, 1974; Mauksch & David, 1972; Neilson, 1978).

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Moreover, learning the steps of the process does not necessarily equip a nurse to operationalize the process. Nursing requires a strong cognitive process as well as developed skills. The effective teaching of the theoretical model in conjunction with the realities of the operations of nursing practice are felt by many in the profession to be lacking (Aspinwall, 1976; Asworth, 1980a, 1980b; Goodwin, 1980; Hammon, 1978; Kramer, Holaday, & Hoeffer, 1981).

Patterns of practice become quickly and firmly established in newly-graduated nurses, with little regard to the theoretical model that has been thrust at them as part of their curriculum, in isolation from practice, during their nursing education. The operations of practice become the model of care, and the concepts of the nursing process go underutilized, if they are applied at all (Hammond, 1978).

Consistent with the literature, it was found that the staff nurses in an acute care hospital in Portland, Oregon, were not in compliance with existing departmental philosophy, policies, and procedures relative to utilization and documentation of use of the nursing process as a basis of nursing care given to patients. Therefore, in 1980, the Director of Medical Center Education, in conjunction with members of the nursing management team, developed and implemented an inservice training program for staff nurses.

Methology

The research setting was a 225-bed general hospital in Portland, Oregon. The facility is a designated Health Maintenance Organization (HMO) and one of two acute care hospitals which, in conjunction with nine outpatient medical clinics and four dental clinics, provides health care to approximately 280,000 people in the Portland Metropolitan area. This health care plan has one unique characteristic which separates it from other health care plans in the area and which impacts the delivery of health care services: it is a comprehensive prepaid health care program. Participants do not pay for services received on the

typical fee-for-service basis; rather, they select the type of health care membership plan coverage they want and they pay their premiums on a monthly basis. Enrollment is usually handled in blocks rather than on an individual membership basis.

This health care program is one component of a multi-state program. The structure consists of four corporations whose major functions are: (1) marketing, (2) provision of outpatient health care services, (3) provision of inpatient health care services, and (4) provision of outpatient dental services.

Sample Characteristics

The total sample of newly-employed nurses (n = 102) at an acute care hospital in Portland, Oregon, was partitioned into: the audit sample (n = 82) and those whose job assignments did not permit auditing patients' charts for compliance with nursing process procedures (n = 20).

The sample consisted of 95 registered nurses, 39 with Associate Degrees in Nursing, 20 with Diplomas in Nursing, 36 with Baccalaureate Degrees in Nursing, and 7 licensed Practical Nurses. Nursing experiences of the group ranged from 18 who had more than 10 years of nursing experience, 31 who had 6-10 years of nursing experience, and 53 who had less than six years of nursing experience. All of the nurses were hired to work in the three major clinical arenas: Medical/Surgical, Maternal/Child, and Critical Care.

Description of Nursing Process Class

The nursing process class was designed to meet the objectives of the Department of Inpatient Nursing Services at Bess Kaiser Medical Center, that staff nurses use nursing process as a model for the planning and delivery of quality, patient-focused health care and document utilization of nursing process in the patients' charts. The Director of Medical Center Education, in conjunction

with other nursing management team members, developed a curriculum and implemented a class in nursing process to comply with the recommendations of the nursing management team. The class is four hours in duration and is mandatory for all RN's and LPN's in the facility. The objectives of the class are that nurses, at the completion of the class, will be able to:

1. Express an awareness of the relationship between the nursing process and delivery of nursing care.
2. Describe the components of the nursing process.
3. Distinguish between a medical diagnosis and a nursing diagnosis.
4. Utilize interviewing techniques to obtain pertinent patient information for the care plan.*
5. Distinguish between the terms "patient goal" and "patient problem."*
6. Describe long and short range goals in terms of patient behavior and outcome.*
7. Utilize assessment information to establish short term goals.*
8. Develop nursing actions needed to accomplish the short range goal.*
9. Reassess the patient to evaluate effectiveness of nursing.*
10. Document the nursing process through utilization of the nursing care plans and other appropriate forms.*
11. Integrate the nursing process into the unit's delivery of health care.*
12. Assume responsibility and accountability for the nursing care delivered.*

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* LPN will do this in cooperation with the RN.

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The forms used in patients' charts to document nursing care given from the time of admission to discharge from the hospital were the focal points of the curriculum development. Each form with attendant instructions for proper use was carefully described, and a didactic presentation of each individual stage of the nursing process was given.

The classes began with the first step in the process, the Assessment Stage. The Nursing Assessment Form is the tool used to document pertinent data about the patient upon admission to the hospital. This form acts as a guide for the nurse in the process of assessing the patients' needs and is the vehicle for documentation of formulation of the nursing diagnosis.

Methods to facilitate good assessment skills, directions for effective interviewing techniques, consideration of factors affecting patients' responses (e.g., privacy, fear, environmental factors, etc.) were discussed. Identification of what constitutes a nursing diagnosis and its relationship to a medical diagnosis were presented; and case studies, role playing, and questions and answer sessions were implemented to give the class participants a chance to become comfortable with the content of the curriculum and to be able to implement what they had learned on the operations level.

The Problem List-Nursing, a form used to document nursing diagnoses and patient needs arising from the problems listed, was used in case studies reviewed by small groups in the classes. The Patient Progress Note, a form used to document nursing orders and plans of care, was used in conjunction with teaching the second stage of the nursing process, the Planning Stage, and the third step or Implementation Stage. The fourth necessary form, the Flow Sheet, was used with the Patient Progress Note to evidence continuity of plans of care to document the final stage of the process, the Evaluation Stage. The content of the classes and the participative response of the nurses attending combined to structure the teaching/learning process of the nursing process classes.

All participants were pre- and post-tested as a part of the class

Instrumentation

Four instruments were constructed. The auditing tool was designed specifically for this study. Construction of the tool was based on the four forms employed to facilitate the use and documentation of the nursing process by staff nurses: (1) Nursing Assessment Form; (2) the Problem List-Nursing; (3) the Patient Progress Note; and (4) the Flow Sheet. The Characteristics of Nurse Sample form was designed to supply specific demographic data about each nurse and attitudinal responses relative to how the nurse perceived the nursing process as a model for nursing care. Finally, the pre-test and post-test were constructed as evaluative components of the inservice training program; they contained questions for both theoretical and operational nursing application.

The pre and post-tests were developed to indicate the level of knowledge of each nurse participant relative to the nursing process both before and after instruction by the researcher.

Questions on both tests were developed with the four phases of the nursing process as a core of the examination. The unique aspects of each individual phase as well as their interrelationships were the focus of test design. The logical flow of the thought process associated with application of the individual phases was emphasized. Thus the tests were constructed to reflect the content and objectives of the Nursing Process Class, and in this respect may be viewed as demonstrating content validity. Using the test results from the total sample, the reliability coefficients of the pre-test and post-test were estimated, using a modified KR21 as suggested by Ebel (1979, p.281). These coefficients were, respectively, .721 and .869.

Training of Auditors

As previously stated, all 12 of the nursing process classes were taught by the researcher. Instructors from the Medical Center Education Department (M.C.E.) were required to: (1) audit at least one class, and (2) be familiar with existing charting protocols and forms used by the staff RN's to document the use of nursing process activities.

To ensure standardization of the audit process, the researcher educated all instructors in the rationale for use of both the existing forms and the tool designed specifically for this audit. The case study approach was followed to illustrate use of the audit tool. The researcher, as a second step of the instruction process, accompanied each instructor and supervised the audit of three charts of staff RN's in the sample. All completed audit tools were reviewed by the researcher for completeness and accuracy.

Data Collection Procedures

All participants attended one of the nursing process workshops designed to teach the basic principles of the nursing process, to acquaint nurses with nursing process procedures and forms used in the hospital, and to help nurses understand the importance of nursing process in patient care. Each participant was administered a Characteristics of Nurse Sample form and a pre-test at the beginning of the class and a post-test at the end. For the audit sample of nurses, an audit was performed four weeks after completion of the nursing process class for each nurse in the sample.

The auditor examined three patient charts that contained documentation by the nurses who had responsibility for those charts (total staff nurses) and for completeness by the audit sample nurses of those items which they should have completed. The data yielded the following measures: (1) pre-test, post-test

and perceived understanding scores of all nurse participants and the audit sample; (2) post-test common scores (items of the post-test which comprise the pre-test), difference scores (between the pre-test and the post-test), and percent of appropriate entries completed as determined by the chart audits for the audit sample; and (3) for each item on the audit forms, the number of completed entries on the audited-patient charts as a measure of total nursing staff compliance with the directives concerning nursing process.

Data Analysis

Means and standard deviations were calculated for the audit sample on the pretest, post-test, and post-test common items, self-understanding scale, and percent complete on the chart audits. A related samples t test was used to test the statistical hypothesis concerning the difference between the pre-test mean and the common-items, post-test mean. For each type of nursing education, means and standard deviations were computed on the pretest, post-test, difference scores, understanding scale, and the percent complete on the chart audits. An analysis of variance, followed by Schaffé's test for each pair-wise mean comparison, was performed on these dependent variables, using type of nursing education as the independent variable. All tests were performed at the .05 level of significance.

Results and Conclusions

The means and standard deviations for the pre-test, post-test, post-test common items, understanding, and percent complete on the audits are presented in Table 1. The means were: pre-test (10.1), post-test common (10.9), post-test (19.6), understanding (3.4), and percent complete on the audits (79.0).

Table 1 About Here

The statistical hypothesis that the pre-test and common-items post-test population means are equal was rejected ($t = 3.22$; $p < .01$); the common-item post-test mean was greater than the pre-test mean. From the difference between the means we can conclude that this inservice training program was effective in helping newly-employed nurses acquire additional knowledge about the methodology used in nursing process as it is applied in clinical settings. Also, the audit of the charts of the patients of the participating nurses indicated that they did apply nursing process in their work with the patients (79% of the appropriate items were documented). If one extrapolates an overall compliance rate from the tables in the earlier study, Johnson (1982) found that there was only a 54.8% compliance. This supports an inference that the nursing process class is influencing the charting behavior of staff nurses; whether this apparent gain will be maintained over time is yet to be determined.

The means and standard deviations for the four groups which were formed by stratifying the audit sample by type of nursing education are presented in Table 2.

Table 2 About Here

Analyses of variance were performed on the type of nursing educational preparation using pre-test, post-test, change scores (from pre-test to common-items, post-test), understanding, and percent completion as dependent variables.

The sums of squares, degrees of freedom, and mean squares for the between- and within-groups are shown in Table 3. The statistical hypothesis was rejected in two of the analyses of variance: pretest ($F = 3.50$; $df = 3, 78$; $p < .02$) and post-test ($F = 6.00$, $df = 3, 78$; $p < .01$). On both tests, the means for the LPN's were significantly lower than the respective means for the BSN's, and the post-test mean for the LPN's was also significantly lower than for the ADN's. Significant differences were not found on the difference scores, self-understanding scores, and the percent complete on the audits. These results supports the position that the education of LPN's is significantly different from those of other groups and that these nurses may need more intensive inservice training to reach the same level of knowledge.

Table 3 About Here

Importance of Study

It should be recognized that this study was quasi-experimental in design. Consequently, it is possible that variables other than independent variables of direct concern to the study contributed to the results obtained. However, given the experimental setting in which the study was conducted and the characteristics of the sample, it is unlikely that most of the internal threats to the validity of the study were in fact operational and contributed directly to the results obtained.

With appropriate recognition of the limitations, it is possible to generalize with care the results of this study to other hospital settings in which this nursing process class might be placed into operation. Nurses can be taught to use the nursing process in a clinical setting, to transfer nursing process

theory to practice and to document same in the patients' charts. It also suggests a general procedure which might be used in inservice training at the hospital level or incorporated into the curriculum of the directed clinical practice sessions of schools of nursing.

The results of this study support the position taken by many nursing educators that the educational process for nurses must include not only the theory of nursing process, but a practical method of application of the theory to practice. This training program combined those two components, and the results were positive.

Teaching in isolation from practive has been advanced by many of the authors cited in the literature review as one of the potential contributing causes to lack of successful implementation of nursing process into nursing practice. One might, therefore, raise a subtle point for discussion or perhaps for future study: is the recognized disparity due to inadequate practice mechanisms or inadequate instruction in practice?

Table 1. Means and Standard Deviations for the Audit Sample on Six Dependent Variables (n = 82)

Variable	Mean	Standard Deviation
Pre-test	10.0854	1,8539
Post-test Common	10.8537	1.5879
Post-test	19.6341	2.1228
Understanding	3.3902	0.9782
Percent complete	78.9756	14.9154

Table 2. Means and Standard Deviations for Type of Nursing Education Audited Sample (n = 82)

Variable	Group	Mean	Standard Deviation
Pre-test	LPN	8.3333	1.0328
	ADN	9.9706	2.1530
	DIP	9.8000	1.4736
	BSN	10.7778	1.4763
Post-test Common	LPN	9.1667	2.1370
	ADN	11.1471	1.3514
	DIP	10.2667	1.6676
	BSN	11.1852	1.4421
Post-test	LPN	17.1667	1.4720
	ADN	20.0294	2.0668
	DIP	18.6000	1.9198
	BSN	20.2593	1.8932
Percent Complete	LPN	91.0000	7.3756
	ADN	78.2647	16.3064
	DIP	81.5333	12.8222
	BSN	75.7778	14.4284
Understanding	LPN	3.6667	0.5164
	ADN	3.0882	0.9001
	DIP	3.3333	1.2910
	BSN	3.7407	0.8590

Table 3. Analyses of Variance on Type of Nursing Education Audited Sample (n = 82)

Variable	SS_b	DF_b	MS_b	SS_w	DF_w	MS_w	F	P
Pre-test	33.03	3	11.01	245.37	78	3.15	3.500	.019*
Post-test	68.44	3	22.81	296.59	78	3.80	5.999	.001*
Change Scores on Common Items	10.57	3	3.52	368.03	78	4.72	0.747	.527
% Complete on Audit	1258.93	3	419.64	16761.02	78	214.88	1.953	.128
Understanding	6.93	3	2.31	70.59	78	0.905	2.551	.062

* Rejected at the .05 level

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